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ABSTRACT

This paper describes a study undertaken to develop a comprehensive account of the levels of problem behavior in U.S. schools. It was designed to assess the nature, extent, and quality of prevention and intervention activity directed at problem behaviors in a representative sample of the nation's schools. Five kinds of information were collected: (1) examples were collected of prevention and intervention models being used; (2) principals identified activities their schools had in place to prevent delinquency, drug use, and other problem behaviors; (3) individuals knowledgeable about school prevention activities were surveyed to obtain detailed descriptions of specific prevention activities; (4) teachers and students were surveyed to obtain reports of their own participation in prevention activities; and (5) principals were surveyed a second time about disciplinary actions and crime in their schools. Activity questionnaires were used to obtain detailed descriptions of the nature, level, and quality of implementation of specific prevention activities. From the total sample of more than 17,000 prevention activities identified, one activity in each of 14 categories was sampled. Questionnaires were sent for about 7,100 activities and 3,700 were completed. All D.A.R.E. and peer mediation programs were sampled. (Contains 1 reference and 6 figures.) (JDM)

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Design and Implementation of a Large-Sample Study of Schools

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Design and Implementation of a Large-Sample Study of Schools

I will describe the sample of schools in the National Study of Delinquency Prevention in Schools. I will also describe (a) questionnaire surveys developed for principals, teachers, students, and program implementers; (b) who provided information and (c) how schools were recruited to participate and how many participated.

The study was undertaken to develop a comprehensive account of the levels of problem behavior in U.S. schools and of what schools do to prevent problem behavior and to promote a safe environment. The study contrasts with much evaluation research that is directed at assessing the effectiveness of specific practices. Our research was not undertaken to assess the effectiveness of specific instances of prevention or intervention activities. Much evaluation research examines isolated programs and seeks to determine their effects. But many program evaluations lack ecological validity. Because typical evaluations are designed to focus on one or a small number of specific realizations of a program or practice, they lack a sufficiently representative design to describe typical practices or the typical degree of strength and integrity attained when programs are applied outside of the experimental context. In contrast, the present research was designed to assess the nature, extent, and quality of prevention and intervention activity directed at problem behavior and school safety in a representative sample of the nation's schools.

Research has shown that some kinds of interventions to reduce problem behavior can be effective. For example, behavioral and cognitive-behavioral interventions have repeatedly been shown to be effective in reducing problem behavior or improving attendance. In many cases, however, the evidence derives from optimal or at least good implementations of the intervention in question. Often investigators train implementers, monitor their behavior, correct implementation errors, or are directly involved in the application of the method being studied. In some cases, the evidence is derived from schools that were especially amenable to program implementation.

In research programs, the capacity of the school to serve as an implementation site is likely to be greater than the typical school – evidenced at least in part by its willingness to participate in a research project. In addition, the particular implementers (teachers or others) are likely to be selected for their willingness to implement a program and cooperate with evaluators, and quick ability to learn to put new methods in place. In all of these respects, they are likely to produce better instances of implementation than would be achieved in the average school, let alone schools where many youths are engaged in high levels of problem behavior or where faculty are demoralized.

Schools and their personnel differ in the extent to which they are able or willing to produce strong and faithful implementations of intended programs. For example, in a study of eight urban schools, Botvin and his colleagues reported that the amount of Life Skills Training material covered by teachers ranged from 44% to 83%. Positive effects

of the program were found only for a high implementation group, not for the low implementation group. In another study by Botvin and colleagues, coverage of the curriculum ranged from 27% to 97%, with 75% of students exposed to 60% or more of the material. The level of implementation was related to the effectiveness of the intervention.

Health and mental health researchers refer to the distinction between intervention efficacy (an efficacious intervention can work) and effectiveness (how well the intervention does work when applied in typical settings by typical practitioners). In this language, some interventions to reduce or prevent problem behavior have been shown to have efficacy, but almost no interventions have been shown to be generally effective. If efficacious interventions are ineffective, it is likely that flawed implementation is a large part of the reason. Our project focuses on implementation.

Hypotheses

With this perspective on the importance of the problem of implementation in representative settings, a number of factors were hypothesized on the basis of prior research or experience to be linked to the successful implementation of prevention programs. These are summarized in the first figure.

1. Organizational capacity (morale, staff stability, history of failed or successful programs in the past). Better morale, more stable staff, and a history of successful program implementation is expected to go with better current implementation. In contrast, low morale, high staff or principal turnover, and a history of failed programs is expected to go with poor implementation.

2. Leadership and staff traits and past accomplishments. Implementation is expected to be better in schools in which principals report that they display behaviors associated with effective leadership and where they are perceived by others as effective leaders. Schools where principals or program implementers have a record of accomplishment in the past are expected to be more successful in what they currently implement. And programs implemented by more conscientious implementers in schools led by more conscientious principals are expected to be better implemented.

3. Budget and resources. Lack of adequate budget or resources is expected to thwart successful program implementation.

4. Organizational support. Extensive and high quality training is expected to promote high quality and extensive implementation, whereas lack of training or poor training is expected to lead to weak or poor quality implementation. Direct and extensive supervision is expected to lead to higher quality and more complete implementation. Principal support for an activity is expected to lead to more extensive implementation and to higher quality implementation.

5. Program structure, manuals, implementation standards, and quality control mechanisms. Greater structure is expected to lead to higher quality implementation and implementation that more closely follows a plan for what should be implemented. Implementation manuals can provide scaffolding for implementers by providing structure, an organization, and a plan for what to do as well as guidance on how to do it. Prepared materials, such as handouts, overhead masters, and videotapes, can make implementation easier and deviation from intended content less likely. Statements of standards for implementation provide the persons implementing a program with a basis for determining whether what is being done is good enough. And quality control mechanisms such as procedures for monitoring progress, review of progress, and worker supervision are expected to promote better implementation by focusing attention on how well implementation is being done.

6. Integration into normal school operations, local initiation, and local planning. The extent to which program design choices are integrated with normal school operations is expected to have consequences for implementation. Better integration of activities with the regularities of the school is expected to lead to more enthusiastic and widespread adoption of prevention practices within a school. Schools employ teachers, supervised by principals, to carry out instruction. Schools also sometimes utilize the services of volunteers or other persons not employed by the school. The school has much less control over the timing, duration, and extent of involvement of external personnel than it does over regular employees. When prevention activity is carried out by regular school employees in the conduct of their routine work, it is more likely to be widely implemented.

   When locally planned or initiated, activities are (by definition) not imposed upon a school. Accordingly, impulses to resist adoption or implementation—which are sometimes triggered by programs imposed upon a school—are less likely to be evoked by locally planned programs.

   When school personnel use information derived from researchers, experts, publications, and other sources about how to implement activities, they are expected to incorporate more best practices and to emulate successful models more fully because they are more likely to have the information needed to do so.

7. Program feasibility (match between program design features and regular activities of schools, few obstacles). Some activities or arrangements are expected to encounter obstacles to implementation. Activities that occur after the end (or before the beginning) of the regular school day or on weekends will be more difficult to implement because they are outside of regular work hours, for example.

8. Level of disorder. We hypothesized that high levels of disorder in a school will make everything more difficult to implement.

Plan of the Research

The plan for the research called for the collection of five main kinds of information by executing an equal number of steps. The second figure shows a summary.

First, examples of prevention and intervention models being used in schools were collected, examined and classified to develop a comprehensive taxonomy of activities. This first step was completed at the end of 1996. Figure 3 is adapted from the complete taxonomy. Plans were made to obtain detailed information about the first 14 categories shown in this figure.

Second, principals in a national probability sample of schools were surveyed to identify activities their schools had in place to prevent or reduce delinquency, drug use, or other problem behavior or to promote a safe and orderly school environment. They indicated if their school had activities of various types, named the activities, and provided the names of individuals who could provide details about each activity named. The resulting lists of school prevention and intervention programs were used to sample prevention activities in a subsequent step. Principals also described features of their schools and reported on past experiences with the implementation of programs and on school staffing. These surveys were conducted in the spring, summer, and early fall of 1997.

Third, individuals knowledgeable about school prevention activities (called "activity coordinators") were surveyed to obtain detailed descriptions of specific prevention activities and to describe certain features of their school. To conduct these surveys, we developed a set of fourteen activity coordinator questionnaires corresponding to fourteen categories in our taxonomy of prevention models. To the extent possible, the questionnaires for all categories were parallel. Thus, although the specific content of questionnaires for different areas was appropriate for activities of each type, the nature of information sought was parallel. Wherever possible each questionnaire sought information about the extent to which best practices were used, about the extensiveness of student exposure, about training, and so forth. Activity coordinators also reported about themselves and about school support and supervision for prevention activities. These surveys were conducted in the spring of 1998.

Fourth, teachers and students in participating secondary schools were surveyed to obtain their reports of their own participation in prevention activities, about prevention activities in the school, and to obtain reports about victimization, safety, delinquent behavior, school orderliness, and other aspects of school climate. These surveys were conducted in the spring of 1998. Generally, all teachers in participating schools were sampled, and a sufficient number of students were sampled to produce an estimated 50 respondents per school.

Fifth, principals were surveyed for a second time in the spring of 1998. They reported about school-wide disciplinary policies and practices, crimes occurring in the

school, certain school-wide arrangements such as scheduling, architectural features of the school, and other characteristics of the school about which the principal was the most appropriate informant. Principals also reported about their own practices, biographical history, and personality style.

Figure 4 summarizes the surveys conducted and the type of information collected in each. Not shown in the figure, we also used certain archival information – drawn from the Common Core of Data maintained by the U.S. Department of Education, provided by the mailing list vendor, or obtained from the 1990 census of population.

The sample was designed to describe schools in the United States and to describe schools by level and location. Accordingly a sample of public, private, and Catholic schools, stratified by location (urban, suburban, and rural) and level (elementary, middle, and high) was drawn. A probability sample of 1287 schools was selected with the expectation that if a response rate of 70% could be achieved there would be 300 schools responding at each level and 300 schools responding from each location.

Conducting Surveys and Participation Rates

In conducting the phase 1 principal survey, we determined that of the 1287 entities sampled, 7 were closed and one was not a school – leaving 1279 schools in the sample. Overall, useful responses were received from 848 schools in phase 1 principal survey, 66% of those from which responses were sought. Participation rates ranged from a low of 59% among urban high schools to a high of 75% among rural elementary schools. Participation rates and number of participating schools for each component of the project are shown in Figure 5. Participation at the level of student surveys was the most difficult to obtain – as was participation of urban high schools in general.

The effort that was required to obtain completed questionnaires from schools far exceeded our expectations. Information about effort required to obtain data in phase 1 is summarized in Figure 6. One indication of the difficulty involved are the counts of telephone contacts with schools that were required to obtain cooperation. In all, we completed 8,783 telephone calls to schools to request phase 1 principal data. The number of calls per school ranged from 0 (some schools returned questionnaires without having to be called) to 36. The average number of telephone calls made to schools that had to be called at least once was 7.9 completed calls. In addition, survey materials were resent once by Federal Express to 964 schools that had not responded.

Many schools still indicated to our callers that they had not received or had misplaced the questionnaires, and our response was to mail another set of replacements. This was done for 531 schools (42% of the sample). Replacements for "lost" questionnaires were resent twice to 118 schools (9%) and three times to 21 schools (2%). When we could obtain school telefax numbers, we sent faxes to

nonresponding schools. One telefaxed request was sent to 225 schools and two telefaxed requests were sent to 13 schools.

In view of the difficulty in obtaining data from schools, we sought ways to bring greater resources to the research. NIJ personnel assisted us in working with the Department of Education to bring about a merger of our ongoing study and resources intended to address similar problems in the form of a contract ED had with Westat to gather information about school violence and programs sponsored by the Safe and Drug Free Schools and Communities Act.

In conducting the phase 2 surveys, an additional school was found to have been closed, leaving 1278 schools in the sample. Again, obtaining cooperation was most difficult in urban schools, where completed phase 2 principal questionnaires were obtained for 46% of the sample. Rural schools were more cooperative, and we obtained completed phase 2 principal questionnaires from 57% of rural schools. Participation ranged from a low of 40% for urban high schools to 58% for rural middle grades schools. Figure 5 (again) summarizes participation rates.

We sought the completion of student questionnaires in all secondary schools. Usable questionnaires were completed by over 16,000 students. Schools with poor levels of student participation are treated as nonparticipants in the figure. Overall, 36% of the secondary schools from whom participation was sought in student surveys participated at a useful level. Participation ranged from a low of 23% of urban high schools to 50% of rural middle schools.

We sought the completion of teacher questionnaires in all secondary schools, and usable questionnaires were completed by over 13,000 teachers. Rural schools were much more cooperative than suburban or urban schools. Participation ranged from a low of 39% of urban high schools to 59% of rural middle schools.

Activity questionnaires were used to obtain detailed descriptions of the nature, level, and quality of implementation of specific prevention activities. From the total sample of more than 17,000 prevention activities identified in phase 1, we sampled one activity in each of 14 categories per school. In addition, we sampled all D.A.R.E. and peer mediation programs because of special interest in these particularly popular prevention programs. We sent questionnaires for about 7,100 activities. Of these, almost 3,700 were completed (46% of all sampled activities and 52% of the activities for which information was requested).

Reference

Gottfredson, G. D., Gottfredson, D. C., Czeh, E. R., Cantor, D., Crosse, S. B., & Hantman, I. (2000). *National study of delinquency prevention in schools* (Final Report, Grant No. 96-MU-MU-0008). Ellicott City, MD: Gottfredson Associates, Inc.

Hypothesized Factors Leading to Successful Program Implementation

The following foster successful implementation of prevention programs:

- ★ **Organizational capacity (morale, history of few failed programs in the past, staffing stability)**
- ★ **Leadership and staff traits, past accomplishments**
- ★ **Budget and support**
- ★ **Organizational support (training, supervision, principal support)**
- ★ **Program structure — manuals, implementation standards, quality control mechanisms**
- ★ **Integration with normal school operations, local initiation, local planning, local information use**
- ★ **Program feasibility — match between program design features and regular activities of the implementing school**
- ★ **Little disorder**

"For whoever has, to him more will be given, and he will have abundance; but whoever does not have, even what he has will be taken away from him." **Matthew 13:12**

Project Design

Development of taxonomy of prevention activities

Collected, examined, and classified examples of prevention models being now being used in schools

Principal survey for program identification

(spring and summer 1997)
identified program implementers
described features of schools
reported on experiences with implementation & staffing

Activity coordinator survey

(spring 1998)
described programs and certain features of the school

Teacher and student surveys

(spring 1998)
described participation in prevention activities, school climate
reported on victimization, safety, other features of the school

Principal discipline and school-wide practices survey

(spring 1998)
described certain school-wide arrangements – especially discipline – and their own practices and style

A Classification of Prevention Activity

1. Prevention curriculum, instruction, or training
2. Behavioral or behavior modification interventions
3. Counseling/social work/psychological/therapeutic interventions
4. Individual attention/mentoring/tutoring/coaching
5. Recreational, enrichment and leisure activities
6. Referral to other agencies or for other services
7. Improved instructional methods or practices
8. Improved classroom management methods or practices
9. Distinctive culture or climate for interpersonal exchanges – or improvements to intergroup relations or interaction between school & community
10. Use of external personnel resources in classrooms
11. Youth roles in regulating and responding to student conduct
12. School planning structure or process – or management of change
13. Security and surveillance
14. Services to families
15. Rules, policies, regulations, laws, or enforcement
16. Provision of information
17. Reorganization of grades, classes, or school schedules
18. Exclusion of weapons or contraband
19. Alter school composition
20. Training or staff development intervention
21. Architectural features of the school
22. Treatment or prevention interventions for administration, faculty, or staff

Measures Employed and Sources of Information				
What is measured	Principal	Teachers	Students	Imple-menters
Grade levels/Demographics	■	■	■	
School safety		■	■	
Victimization		■	■	
Drug use, violence, other delinquent behavior	■		■	
School climate — morale, administrator leadership, discipline related	■	■	■	■
Level of implementation of activities	■	■	■	■
Correlates of problem behavior			■	
Leadership style of principal	■	■		
Personality	■			■
Biographical data	■			■
Organizational origins of activities	■			■
Funding sources	■			■
Nature & extent of training	■			■
Program features	■			■
Staff stability vs. turnover	■			■
Organizational capacity	■	■		■

Participation Rates and Numbers of Participating Schools

Study component	% schools participating	*N* schools participating
Principal survey, 1997	66	848
Principal survey, 1998	50	635
Student survey, 1998	37	310
Teacher survey, 1998	48	403
Activity coordinator survey, 1998	43	554
	% activities participating	*N* activities participating
Activity coordinator survey, 1998	52	3691

Note. Student and teacher surveys were sought in secondary schools only.

Steps to Obtain Responses in Phase 1 Principal Survey

Initially Planned	Implemented
	Heads up mailing to 1287 principals indicating questionnaire is coming
Initial mailing of 900 questionnaires	Initial mailing of 1287 questionnaires
	1213 reminder post-cards
Telephone contact with school to seek return	1112 schools required calls because they did not return materials without one; 8,783 completed phone calls; 7.9 telephone contacts per school that initially failed to respond (range 1-36)
	38 requests for district approval for principal to answer questions filed
	964 replacement deliveries by Federal Express with questionnaires, personal note, letters from principals' assns.
Replacement mailings of survey materials	670 ADDITIONAL replacement deliveries to principals who lost or discarded materials (531 once, 118 twice, 21 three times)
	6 principals interviewed
	751 mailings with letter from NIJ director
	238 telefax requests for completion

END

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